

Appl. No : 10/615,524
Filed : July 3, 2003

REMARKS

With this Amendment, Claims 1-15 are pending in the present application Claims 1, 3, 9 and 10 having been amended. Anticipation under 35 U.S.C. § 102

Claims 1-10 and 12-15 were rejected under 35 U.S.C. § 102(e) as being anticipated by Kawahara et al. (US 5,989,635). Applicants respectfully submit that Claims 1-15, as amended, are in condition for allowance.

In rejecting Claim 1, the Examiner indicated that the limitation “heating the chamber to a temperature above about 600 °C” is anticipated by a statement in Kawahara which suggests the reaction chamber can be raised to a temperature of 400 to 600 °C (found at Col. 3, lines 5 & 6). Applicants respectfully submit that this range is not disclosed by Kawahara with sufficient specificity to anticipate Claim 1. Kawahara repeatedly emphasizes the importance of maintaining substrate temperature within a narrow range (see col. 8, line 63–col. 9, line 2 and col. 3, lines 31-35), yet the only specific examples of substrate temperature suggested are found at col. 3, line 37 and in Example 1 (see Table 1 at Col. 10), that the substrate temperature should be kept at 420 °C which, according to Kawahara’s FIG. 23, corresponds to a chamber temperature of about 450 °C. Thus, the chamber temperature range of Kawahara lacks specificity, since the teachings of Kawahara would not lead one to explore the full range of 400 – 600 °C. Thus Claim 1 as amended, is not anticipated by Kawahara.

In fact, in view of the above-referenced teachings of Kawahara, namely the importance of maintaining substrate temperature within a narrow range coupled with the teaching of a substrate temperature of 420 °C (and correspondingly a chamber temperature of about 450 °C), Kawahara teaches away from forming a BST film with the chamber at the upper end of the 400 to 600 degree range. Thus, Claim 1 is also not rendered obvious by Kawahara.

Furthermore, the broad range of chamber temperatures suggested by Kawahara does not overlap or touch the range recited in Claim 1. Claim 1, as amended, recites “heating the chamber to a temperature *above* 600°C; and depositing the BST film...while maintaining the chamber at a temperature *above* 600 °C.” (emphasis added). Thus, the range suggested by Kawahara does not anticipate Claim 1, since it does not teach or suggest depositing a BST film at a temperature above 600 °C.

Appl. No : **10/615,524**
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Additionally, Kawahara does not teach or suggest maintaining the chamber temperature at such a high temperature throughout deposition of a BST film, as recited in Applicants' amended Claim 1. Thus, for this reason also, Applicants submit that Claim 1 is not anticipated or rendered obvious by Kawahara.

Claim 9 has been amended as indicated above to recite, "wherein the BST film is formed substantially uniformly with a (100) crystal orientation," in combination with the other limitations of that claim. Applicants respectfully submit that the prior art of record does not teach or suggest this combination of features.

Additionally, Applicants respectfully submit that Kawahara et al. does not teach or suggest forming a BST film having a substantially uniform crystal orientation along planes in the {100} family, as recited in Claim 10, as amended. Applicant notes that Kawahara discusses the problem of a heterogeneous component distribution in BST films (e.g. see Col. 3, lines 25-45).

Thus, Claims 1-15 recite unique combinations of limitations that are not taught or suggested by the prior art of record. Therefore, Applicants respectfully request that the rejections of Claims 1-15 be withdrawn.

Obviousness under 35 U.S.C. § 103

Claim 11 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Kawahara in view of Tatatuni et al. Applicants respectfully traverse the rejection. In view of the above amendments and remarks, Applicants respectfully submit that the prior art of record does not teach or suggest the combination of limitations recited in independent Claim 10 from which Claim 11 depends. Thus, Applicants respectfully submit that Claim 11 is also in condition for allowance for at least the reasons discussed above. Applicants therefore respectfully request that the rejection of Claim 11 be withdrawn.

Appl. No : **10/615,524**
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CONCLUSION

The undersigned has made a good faith effort to respond to all of the rejections and objections in the present application and to place the claims into condition for allowance. Nevertheless, if any issues remain which can be resolved by telephone, the Examiner is respectfully requested to call Applicants' representative at the number indicated below in order to resolve such issues promptly.

Respectfully submitted,

KNOBBE, MARTENS, OLSON & BEAR, LLP

Dated: 11/16/04

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